Claims:

1. An optical apparatus having an adjustment apparatus and an optical unit comprising a plurality of optical elements, said adjustment apparatus sequentially providing control signals that, according to a probabilistic search technique, change parameters of a stipulated plurality of optical elements among said optical elements to become parameters that cause functions of said optical apparatus to satisfy stipulated specifications.

2. The optical apparatus according to claim 1, wherein said adjustment apparatus searches optimal values of the control signals at which the functions of the optical apparatus satisfy the stipulated specifications by sequentially changing values of the control signals according to the genetic algorithm and changing the parameters of the stipulated plurality of optical elements.

3. The optical apparatus according to claim 1, wherein said adjustment apparatus searches optimal values at which the functions of the optical apparatus satisfy the stipulated specifications by sequentially changing values of the control signals according to the simulated annealing method and changing the parameters of the stipulated plurality of optical elements.

4. The optical apparatus according to any of claims 1-3, wherein said adjustment apparatus uses an evaluation function that performs weighted sum of a plurality of evaluation results of a state of the functions of the optical apparatus.

5. The optical apparatus according to any of claims 1-3, wherein parameter values are measured while the parameters of the stipulated plurality of optical elements are being adjusted based on the control signals, and stored in memory in the form of pairs each with an observed value of output light at that time, and the parameter values of one pair wherein an evaluation value is greatest among the pairs are set as a local maximum.

6. The optical apparatus according to any of claims 1-3, wherein the optical unit comprising said optical elements is a laser.

7. The optical apparatus according to any of claims 1-3, wherein said stipulated plurality of optical elements comprise a deformable mirror.

8. The optical apparatus according to claim 7, wherein the optical unit comprising said optical elements is a wave-front controller.

9. The optical apparatus according to claim 7, wherein the optical unit comprising said optical elements is a telescope.

10. The optical apparatus of claim 1, wherein said adjustment apparatus comprises an electronic computer and recording media which said electronic computer can read.

11. The optical apparatus of claim 1, wherein a plurality of parameters of a single optical element among the stipulated plurality of optical elements are

changed.

12.   A method of adjusting an optical apparatus that controls a plurality of optical elements constituting an optical unit, comprising the steps of: sequentially providing control signals that, according to a probabilistic search technique, change parameters of a stipulated plurality of optical elements among said optical elements, and searching for optimal values at which functions of said optical apparatus satisfy stipulated specifications.

13.   The method according to claim 12, wherein the search for optimal values of said control signals is performed by sequentially changing values of the control signals according to the genetic algorithm.

14.   The method according to claim 12, wherein the search for optimal values of said control signals is performed by sequentially changing values of the control signals according to the simulated annealing method.

15.   The method according to claim 14, wherein a function that performs weighted sum of a plurality of evaluation results of a state of the functions of the optical apparatus is used as an evaluation function.

16.   The method according to any of claims 12-14, wherein parameter values are measured while the parameters of the stipulated plurality of optical elements are being adjusted based on the control signals, and stored in memory in the form of pairs each with an observed value of output light at that time, and the parameter values of one pair wherein an evaluation value is greatest among the pairs are set as a local maximum.

17.   The method according to any of claims 12-14, wherein it adjusts parameters of the optical elements constituting the optical unit used as a laser.

18.   The method according to any of claims 12-14, wherein it adjusts the parameters of the stipulated plurality of optical elements comprising a deformable mirror.

19.   The method according to claim 18, wherein it adjusts parameters of the optical elements constituting the optical unit used as a wave-front controller.

20.   The method according to claim 18, wherein it adjusts parameters of the optical elements constituting the optical unit used as a telescope.

21.   The method according to claim 12 wherein a plurality of parameters of a single optical element among the stipulated plurality of optical elements are changed.

22.   An adjustment apparatus comprising an electronic computer and recording media which said electronic computer can read, wherein said adjustment apparatus performs adjustment by the method of any of claims 12-14.

23.   Recording media that store an adjustment program that performs the adjustment according to any of claims 12-14.